

DOCUMENT RESUME

ED 304 975

HE 022 278

TITLE Strengthening Educational and Licensure Standards for Physicians in New Jersey: A Report of the Joint Committee of the New Jersey State Board of Higher Education and the New Jersey State Board of Medical Examiners. Quality Medicine, Volume One.

INSTITUTION New Jersey State Board of Higher Education, Trenton.; New Jersey State Board of Medical Examiners.

PUB DATE Mar 87

NOTE 49p.

AVAILABLE FROM Department of Higher Education, State of New Jersey, 225 West State Street, Trenton, New Jersey 08625.

PUB TYPE Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC02 Plus Postage.

DESCRIPTORS *Certification; *Graduate Medical Education; Higher Education; Licensing Examinations (Professions); Medical Care Evaluation; *Medical Education; Medical Services; *Physicians; State Licensing Boards; *State Standards

IDENTIFIERS *New Jersey

ABSTRACT

An extensive study was undertaken of the rapidly changing U.S. health care system, modern medical education, licensure standards in other states, and the physician applicant pool in New Jersey. The ways physicians should be educated and the competencies assessed are examined, and specific recommendations are made in the following areas for strengthening New Jersey's licensure standards: (1) applicants for a physician's license should have a baccalaureate degree with the appropriate range of courses; (2) applicants should be graduates of an appropriate 32-month comprehensive medical education program; (3) the Board of Medical Examiners should discontinue the policy of allowing foreign medical schools to conduct clinical clerkships in New Jersey hospitals; (4) applicants graduating from medical school after January 1, 1987, must have completed a minimum of 3 years of approved graduate medical education; (5) physician immigrants who have met the appropriate educational requirements should be eligible for licensure; (6) physicians seeking relicensure must complete 150 credits of approved continuing medical education every 3 years; (7) all stages of physician education should place increased emphasis on legal and ethical issues in medical practice and professional behavior; (8) applicants must have passed one of the appropriate standardized licensing examinations within three attempts; (9) a clinical skills assessment component should be included in the certification process for foreign medical graduates; and (10) interested groups should establish a process for assessing, reviewing and/or accrediting medical education programs in foreign medical schools as a guide in determining eligibility for licensure of foreign medical graduates. Appendices provide an overview of the development of medical education in the United States and provide a physician licensure requirements in New Jersey. Contains 55 references. (KM)

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Quality Medicine
Volume One

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A Report of the
Joint Committee of the New Jersey State Board of Higher Education
and the New Jersey State Board of Medical Examiners

Quality Medicine
Volume One
March, 1987

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PREPARED BY

Jerome A. Contee, Ph.D.
Assistant Director, Office of the Medical
University and Health Professions Education

Barbara Stearns
Research Assistant, Office of the Medical
University and Health Professions Education

The Honorable Thomas H. Kean
Governor of the State of New Jersey

Members of the New Jersey Legislature

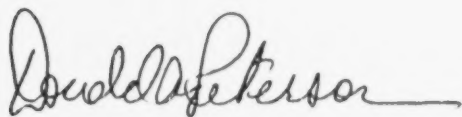
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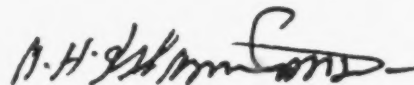
We are pleased to present for your consideration our report *Strengthening Educational and Licensure Standards for Physicians in New Jersey*. This document is the outcome of a year-long study by a joint committee on physician licensure standards appointed by the Board of Higher Education and the Board of Medical Examiners. The respective boards established the joint committee in the fall of 1985 in response to their own and public concern regarding the adequacy of the educational backgrounds of some individuals applying for licensure and/or practicing medicine in New Jersey.

After analyzing modern medical education the committee considered how physicians should be educated and their competencies assessed for independent practice in the contemporary U.S. health care system. In addition, we examined licensure standards in other states and the physician applicant pool in New Jersey. We concluded that New Jersey's current standards, which have not been substantially revised since 1921, do not reflect the breadth and depth of educational preparation that today's physicians need.

The committee believes its recommendations present a reasonable and attainable blueprint for strengthening New Jersey's licensure standards for physicians. We solicit your consideration and your support in implementing these changes. We are confident that you share with us the goal of assuring the public that only the most qualified physicians will be licensed to practice medicine in New Jersey.



Donald A. Peterson, Co-Chairman
Board of Higher Education



Abdol Islami, M.D., Co-Chairman
Board of Medical Examiners

ACKNOWLEDGMENTS

The Joint Committee wishes to acknowledge with thanks the contributions of the many individuals and organizations who provided invaluable information and perspectives on the issues discussed in this report. Our thanks go especially to Charles Janousek and Katherine Carroll of the Board of Medical Examiners staff and Jean Foy and Karen Fernicola of the Department of Higher Education.

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SUMMARY

In the fall of 1985 the New Jersey Board of Higher Education and the New Jersey State Board of Medical Examiners appointed a joint committee to review the legislation and regulations that establish standards for the education and licensure of physicians in New Jersey. *Strengthening Educational and Licensure Standards for Physicians in New Jersey* is the result of an extensive study of the rapidly changing U.S. health care system, modern medical education, licensure standards in other states and the physician applicant pool in New Jersey. The report examines how physicians should be educated and their competencies assessed and makes specific recommendations for strengthening New Jersey's licensure standards.

The U.S. health care system is undergoing a dramatic transformation that includes an unrelenting growth in biomedical knowledge, technology and procedures for the diagnosis and treatment of disease. Additionally, third party payers, health care policy makers and consumers are seeking to exert increased control over health care costs by monitoring the clinical practice behaviors of physicians. If physicians are to function successfully within this environment they must receive a systematic and rigorous medical education that includes a comprehensive curriculum, highly qualified faculty, expert clinical supervision, and modern physical facilities with up to date technological resources.

State licensing authorities are placing physician licensure applicants under increased scrutiny concerning their educational qualifications and clinical competence. Indeed, concerns about the adequacy and authenticity of the educational experiences received by some licensure candidates, especially graduates of some foreign medical schools, have encouraged many medical licensing jurisdictions to establish stricter application and verification procedures. Recent issues such as public disclosures of the questionable medical education credentials of some licensure candidates, an increasing pool of unlicensed physicians and growth in the investigative and disciplinary activities of state licensing boards indicate that this increased scrutiny and tightening of procedures is well justified.

While these issues are national, they highlight the serious challenges facing New Jersey. The state was late in providing medical education programs for its citizens and has traditionally imported a significant percentage of its physicians. In fact, in 1986 the vast majority of New Jersey's new resident physicians were trained out of state and 51% of this group were graduates of foreign medical schools. While there is a trend toward a greater percentage of U.S. medical graduates in New Jersey's residency programs there is still an overreliance upon physicians who are graduates of medical training systems that in many instances do not reflect the standards of quality found in U.S. medical schools. The issue of assessing the adequacy of the educational preparation of graduates of foreign medical schools has been and continues to be of particular importance to New Jersey.

This problem is compounded by the fact that there have not been substantial revisions in the existing New Jersey standards for physician education in over fifty years. The licensure requirements for physicians have not kept pace with modern U.S. standards for educating medical doctors. For example, most U.S. medical schools require a baccalaureate degree for admission and offer a four-year medical education program. However, New Jersey requires only two years of undergraduate preparation and permits, under some circumstances, graduates of three-year medical education programs to gain licensure. As a result of this statutory lag the New Jersey Board of Medical Examiners is continually faced with licensing many new

physician applicants who have significant deficiencies in both their undergraduate and medical education preparation.

In an effort to address all of these issues, the committee recommends a series of actions to strengthen licensure requirements. Four recommendations suggest new educational standards that individuals seeking a New Jersey medical license should meet. In summary, today's physicians should acquire a broad based baccalaureate education that includes a comprehensive understanding of the natural sciences, the social sciences and the humanities. Medical education should include four academic years, including two years of both basic sciences and clinical sciences instruction, integrated to the greatest extent possible to emphasize the interrelationships between biomedical knowledge and clinical medicine. Medical education should provide the basic clinical foundation for the more specialized training of graduate medical education. Within the context of these general standards the committee recommends the following:

1. Physicians applying for a plenary license in New Jersey should possess a baccalaureate degree, or its equivalent, from an institution recognized by a regional accrediting association in the United States or appropriate educational authorities in a foreign country as approved by the Board of Higher Education. This pre-medical study should represent a minimum of 120 academic credits (or foreign equivalent as determined by the Board of Higher Education), include a broad range of courses in the social sciences and the humanities as well as the study of chemistry, physics and biology. A sufficient pre-medical education should also include the development of appropriate communication skills in English.
2. In addition to holding the equivalent of a baccalaureate degree, all physicians seeking a plenary license in New Jersey should be graduates of a comprehensive medical education program of not less than thirty-two months duration offered over a period of four academic years. The only exceptions permitted should be for graduates of experimental, e.g. Ph.D./M.D. or articulated undergraduate/medical education programs approved by the Liaison Committee on Medical Education.
3. The Board of Medical Examiners should discontinue the policy of allowing foreign medical schools to conduct clinical clerkships in New Jersey hospitals. This should be accomplished by allowing the "clinical training rule," N.J.A.C. 13:35-1A, to expire in accordance with the provisions of Executive Order #66, the Sunset Order, in July 1988. Students enrolled in such programs prior to January 1, 1988 should be permitted to conclude their medical education before authorization of these clerkships is discontinued. To be eligible for a plenary license in New Jersey, applicants who have completed clerkships in other states under the auspices of a foreign medical school must have taken those clerkships in a hospital that has a residency program accredited by the Accreditation Council for Graduate Medical Education in each discipline in which clerkships were taken for academic credit.
4. To be eligible for a plenary license in New Jersey all physicians who graduate from medical school after January 1, 1987 must demonstrate successful completion of a minimum of three years of approved graduate medical education.

The committee recognizes that occasionally an exception to these general educational requirements should be made to accommodate the licensure of alien physicians who have immigrated to the United States for personal or professional reasons or as a result of religious persecution or political strife in their native countries. It therefore recommends:

5. Physician immigrants to the United States who have a history of successful medical practice in their native countries should be eligible for a plenary license in New Jersey. To receive a plenary license they should provide proof that they have satisfactorily completed all educational requirements for licensure in their country of origin. Political or religious refugees who are unable to produce original documentation of their medical education credentials should continue to be considered for a plenary license by the Board of Medical Examiners. Successful completion of three years of BME approved graduate medical education in the United States or its equivalent as determined by the Board should be required of immigrant physicians seeking a plenary license in New Jersey.

The committee believes strongly that advances in medical science and technology require that physicians continually update their skills and knowledge. In addition, the public must be assured that doctors continue to meet educational standards necessary for the independent practice of medicine. Consequently, the committee recommends:

6. Physicians seeking relicensure in New Jersey must complete successfully 150 credits of approved continuing medical education every three years. The current relicensure cycle should be changed to a triennial basis.

Advances in medical technology are challenging physicians with new and complex ethical and legal problems related to the appropriate care of patients. If physicians are to cope successfully with these problems in the future they must become more knowledgeable and skilled in incorporating ethical and legal perspectives into their clinical decisions. The committee recommends:

7. At every stage of physician education--pre-medical, medical, residency training and continuing medical education--increased emphasis should be placed upon the legal and ethical issues in contemporary medical practice and professional behavior.

Throughout their lengthy education physicians are periodically evaluated. These periodic assessments include a sequential series of external examinations that are widely accepted for their reliability and validity. Successful completion of these examinations is one indicator of the educational progress of medical students and physicians. The committee also believes the assessment of clinical competence must be an essential part of this certification process. Therefore the committee recommends:

8. To be eligible for primary (initial) licensure in New Jersey a physician should have passed the National Board of Medical Examiners' Examination (NBME) or the Federation Licensing Examination (FLEX) within three attempts. Individuals required to take the Foreign Medical Graduate Examination in the Medical Sciences (FMGEMS) must also have passed within three attempts. Examinees who have failed three times should be permitted to retake the relevant examination upon presentation of proof that they have completed appropriate remedial education and/or training since their last failure.

9. A clinical skills assessment component should be included in the Educational Commission for Foreign Medical Graduates certification process.

While the problem of assessing some foreign medical school graduates is an issue to be resolved, it is clear that medical education is a worldwide enterprise which includes many high quality medical schools outside the United States. An urgent need exists for an evaluation and certification process to assess foreign medical education programs. The committee recommends:

10. The New Jersey Board of Higher Education and the New Jersey State Board of Medical Examiners urge that interested groups establish as soon as possible a process for assessing, reviewing and/or accrediting medical education programs in foreign medical schools as a guide to assist the Board of Medical Examiners in determining eligibility for licensure of foreign medical graduates.

The joint committee strongly believes that implementation of this series of recommendations will serve the public interest of New Jersey by strengthening standards for the education and licensure of physicians. When physicians are awarded the privilege of licensure in New Jersey they are being granted a public trust. The committee feels that this public trust can best be served by licensing only those physicians whose educational backgrounds and accomplishments reflect the state-of-the-art in medical education and health care delivery as it evolves in the contemporary U.S. health care environment.

INTRODUCTION

Throughout the United States prevailing standards for the education and licensure of physicians are being seriously challenged. Physicians are coming under increased scrutiny concerning their preparedness for the practice of medicine. Both public and professional concerns appear to be justified by a number of indicators, including recent disclosures of questionable medical education credentials among some physicians, an increasing pool of unlicensed physicians, and growth in the investigative activities and disciplinary actions of state licensing authorities. In addition, current trends in health care--the expansion of biomedical technology, increases in alternative health delivery systems and cost containment initiatives--are significantly altering medical practice patterns. Physicians must adapt to specific changes in the medical practice environment at a rapid pace. As a consequence, important questions are being raised about how physicians should be trained to function successfully in this changing environment.

While these issues are national ones, they are especially problematic for New Jersey. A latecomer in providing medical education for its citizens, the state has long been an importer of physicians. This situation has changed somewhat in recent years, but New Jersey still faces serious challenges in assuring that its people have access to the highest quality health care.

THE NATIONAL PERSPECTIVE

Growing Concerns over Questionable Medical Education Credentials

During the past six years many state medical licensing authorities have established stricter application and verification procedures for physician licensure candidates. In part, this tightening of the licensure process is attributable to concerns about the adequacy and the authenticity of the educational experiences received by some foreign medical graduates (FMGs). According to the Office of Inspector General, U.S. Department of Health and Human Services, the number of FMGs receiving initial state licenses rose from 3,131 in 1981 to 4,094 in 1984. This is an increase from 16.6% to 22.3% of all physicians receiving initial licenses for this period.

With such a significant number of FMGs applying for licensure, the lack of a centralized accrediting agency for foreign medical schools has presented some thorny problems for U.S. licensing agencies. Although medical schools in some countries are subject to quality controls by the national government or an accrediting agency in the host country, many are not subject to such oversight. As a rule, medical education standards in other countries are not equivalent to those in the United States. Therefore, state licensing authorities cannot readily ascertain the educational quality of the training programs in foreign schools. The federal government's appraisal of certain foreign medical schools (undertaken by the U.S. General Accounting Office) is even more disturbing than the dearth of information. A 1980 federal report entitled "Policies on U.S. Citizens Studying Medicine Abroad Need Review and Reappraisal" stated that of the six foreign medical schools visited, "none of them offered a medical education comparable to that available in the United States because of deficiencies in admission requirements, facilities and equipment, faculty, curriculum, or clinical training." A 1985 update of the report contained similar findings.

The Increasing Pool of Unlicensed Physicians

Graduates of programs whose standards do not meet U.S. medical education norms frequently face difficulties meeting licensing requirements of the various states. Indeed, the 1980's have seen a sizeable increase in the number of unlicensed physicians. While failure to obtain a license does not necessarily indicate a poorly trained physician, it does indicate a candidate's inability to meet medical board requirements for the independent practice of medicine.

Foreign medical graduates comprise a significant portion of currently unlicensed physicians, especially those who have been unable to gain entry into an accredited residency program. Participation in graduate medical education is critical to preparation for licensure and independent practice. Data gathered by the National Residency Matching Program (NRMP), which matches residency applicants' ranked preferences with hospitals' corresponding offers of residency positions, indicate that the proportion of successfully matched foreign medical graduates declined significantly from 1981 through 1986.

The 1986 *NRMP Directory*, presenting data on the hospitals' upcoming 1987 residency appointments, noted that U.S. students were most preferred by program directors. As Table I indicates, only 6.7% of U.S. medical students were unmatched. An overwhelming 93.3% of these students were placed. By comparison, 61.4% of the U.S. foreign medical graduates were unable

to find residency positions. The picture was even more bleak among alien foreign medical graduates: 76% remained unmatched. Failure to obtain residency training effectively denies a physician a necessary qualification for obtaining a license in all states except four.

TABLE I
National Resident Matching Program
Residency Positions, Active Applicants and Unmatched Applicants

Year	# of Residency Positions	Active Applicant Total	Positions per Active Applicant	% Unmatched Applicants		
				U.S. Medical Students	U.S. FMGs	Alien FMGs
1981	18,331	16,104	1.13	7.2	32.5	54.7
1982	18,300	18,410	.99	7.9	43.2	68.6
1983	17,952	20,044	.89	7.8	50.7	73.8
1984	18,457	22,052	.84	7.8	55.6	78.1
1985	18,535	22,386	.83	7.4	60.3	78.4
1986	18,770	21,357	.88	6.7	61.4	76.0

The fact that sizeable numbers of foreign medical graduates have been unable to obtain residency positions is compounded by the fact that many are "repeaters" who have been in the match in previous years. According to the Directory, the U.S. is accumulating a sizeable pool of unlicensed FMGs. While there are no accurate data on the number of unlicensed physicians currently in the country, the Federation of State Medical Boards (FSMB) estimates the number to be between 20,000 and 30,000. Indeed, the Federation has publicly expressed its concern over the mounting pool of what it terms "unlicensed and unlicensable people"--the majority are foreign medical graduates who have failed certification tests and cannot secure residencies, thus making them ineligible for licensure.

Investigative Overload Due to the Increasing Incidence of Disciplinary Actions by Medical Licensing Boards

In June 1986, the Office of the Inspector General, U.S. Department of Health and Human Services published a report entitled "Medical Licensure and Discipline: An Overview". According to the report, in recent years many licensing boards have increased their investigatory and disciplinary activities. However, budgetary and personnel increases have not kept pace with expanding workloads. As a result, clogging backlogs and extensive caseloads have become commonplace within the state agencies' licensing systems. This backlog may

number "hundreds of cases," which have yet to be assigned to investigators already handling 60-70 or more cases.

The most substantial activity among the Boards has resulted in reprimands or voluntary stipulations. Though disciplinary responses occur with greater frequency, they are rarely imposed specifically as a result of medical malpractice. Licensing boards have instigated few disciplinary reactions to the malpractice crisis, primarily because of the substantial burden of proof, requiring "clear and convincing" evidence (rather than the "preponderance of evidence") necessary to demonstrate malpractice in the courts. The New Jersey Board of Medical Examiners considers disciplinary action only in cases of gross or repeated acts of malpractice.

Current Trends in Health Care

Concomitant with concerns about the quality of training that some physicians have received, the environment within which they must practice is changing dramatically. New technologies are being developed for the diagnosis and treatment of disease. These require physicians to digest new knowledge and learn new skills at a faster pace. In addition, the traditional "solo practice" model is vanishing as more physicians are practicing in groups and working on a salaried basis. Accountability has expanded to include third party payers, some of which monitor physician practice behaviors as one way of controlling health care costs.

The demands of this changing health care environment and the self analysis that is occurring within the U.S. medical education system have important implications for the education of physicians. The medical school years are no longer viewed as sufficient for preparing physicians for the independent practice of medicine. Rather, medical school has come to be viewed as the period during which physicians prepare for the specialized training of graduate medical education. To prepare physician graduates adequately, medical schools increasingly emphasize learning critical appraisal skills and the management of medical information.

Likewise, since the residency prepares physicians for independent practice, the development of specific practice skills is stressed. Exemplary residency programs teach the skills necessary for clinical decision making, the efficient use of cost effective practice techniques, and the ability to work collaboratively with peers in a variety of health service settings.

The changing trends in health care also have important implications for the licensure of physicians. Doctors being trained outside of the U.S. system, whose education does not reflect current technology and practices in the U.S. health care system, are placed at a disadvantage in delivering high quality patient care. The gap widens continually as the profession's sophistication increases.

NEW JERSEY'S SPECIAL SITUATION

Within the context of national debate about the training and licensing of physicians, the State of New Jersey occupies a unique position and faces particular problems, in part because of its late start in providing medical education. New Jersey had no undergraduate physician education programs prior to 1956 when the Seton Hall College of Medicine and Dentistry was established. The first class graduated in 1960. Approximately 350-400 physicians graduated from Seton Hall during its brief existence. In 1965 the State of New Jersey acquired the Seton Hall College of Medicine and Dentistry which became a public institution as the New Jersey College of Medicine and Dentistry. Meanwhile, Rutgers, the State University had been authorized to operate a two year basic science program in 1964. All medical education efforts in the state were consolidated in 1970 when the College of Medicine and Dentistry of New Jersey (CMDNJ) was created. This institution obtained university status in 1981 and was renamed the University of Medicine and Dentistry of New Jersey. Today it offers complete medical education programs through two allopathic (M.D.) medical schools and a school of osteopathic medicine with combined graduating classes totaling 382 new physicians per year.

The late development of the medical education system in New Jersey meant that quality residency training programs with close medical school affiliations were slow to evolve. While some residency programs in New Jersey hospitals were loosely affiliated with out-of-state medical schools, many had no medical school affiliation at all. Consequently, New Jersey's programs had great difficulty attracting graduates of U.S. medical schools. As a result, a high proportion of residency positions in New Jersey were filled with graduates of foreign medical schools. While enrollment in medical education programs in the state has more than tripled since 1970, the state's difficulty in attracting graduates of U.S. medical schools to its residency programs has persisted. Table II presents data from the Advisory Graduate Medical Education Council annual survey of residents in New Jersey and illustrates the citizenship and location of medical school of residents in New Jersey's graduate medical education (GME) programs from 1980-81 through 1985-86.

TABLE II
Foreign Medical Graduates, Both Alien and United States Citizens,
in New Jersey GME Programs

		1980-81	1981-82	1982-83	1983-84	1984-85	1985-86
U.S. Medical Grads	No.	806	807	956	1022	1143	1281
	%	(39%)	(37%)	(40%)	(42%)	(44%)	(49%)
U.S. Foreign Medical Grads	No.	377	444	679	823	934	873
	%	(18%)	(21%)	(29%)	(33%)	(35%)	(33%)
Alien Foreign Medical Grads	No.	906	910	748	605	541	479
	%	(43%)	(42%)	(31%)	(25%)	(21%)	(18%)
All Trainees		2089	2161	2383	2450	2618	2633

The number of U.S. medical graduates in New Jersey programs has risen dramatically over the last six years but it is still important to note that over half of New Jersey's new resident physicians are graduates of foreign medical schools.

New Jersey's problem is not foreign medical graduates *per se*. Rather, it is the state's overreliance for its physician supply upon medical training systems that in many instances do not reflect the standards of quality found in U.S. medical schools. The issue of assessing the adequacy of the educational preparation of graduates of foreign medical schools, while a national concern, is of particular importance to New Jersey. From January 1983 through October 1986 New Jersey issued 6,817 plenary medical licenses (the license which permits the unrestricted practice of medicine); 3,399 or 49% were issued to graduates of foreign medical schools.

New Jersey's particular problem is best illustrated through an assessment of the qualifications of recent candidates for a plenary license. Applications from foreign medical graduates have been systematically reviewed by the Credentials Committee of the Board of Medical Examiners since 1984. Any candidate whose educational background appears questionable for any reason is requested to appear before the committee for a personal interview. Between May 1984 and October 1986 the committee reviewed a total of 456 applications from foreign medical graduates. Of these, 328, or 72% exhibited educational deficiencies sufficient to warrant an appearance before the committee. This group of 328 physicians had attended more than 60 different foreign medical schools located in 30 countries.

In reviewing the pre-medical preparation of these physicians, only 62% had undisputedly received a baccalaureate degree prior to entering medical school. Furthermore, the applications indicate that 18% had required a waiver of the Medical Qualifying Certificate (a New Jersey licensure requirement) issued upon the completion of undergraduate courses in biology, chemistry and physics. These courses are intended to provide both a fundamental base for medical training, and to indicate, to some extent, the aptitude for such study. While 90% of the 1983 freshman class entering U.S. medical schools had received a B.S. degree, only about one-third of the degreed FMGs had earned a comparable degree in the sciences.

Overall, the academic pre-medical preparation of the sampled FMGs is not as rigorous as one would find in a pool of U.S. trained physicians. The documentation showed that the standards for undergraduate performance acceptable to the foreign medical schools were significantly lower than those imposed by the U.S. medical education system. In the U.S., an individual without a baccalaureate (or an individual who had not completed an accelerated, rigorous program with academic distinction) would be virtually ineligible for admission consideration by an accredited medical school. A significant 96% of the 1985 entering freshman class in the U.S. had completed 4 or more years of college. Additionally, the selective criteria for entry into the U.S. medical education system are extremely competitive. Seventy-six percent of the 1983 freshman class had attained an overall grade point average of 3.30 - 4.0.

In contrast, the records of those FMGs holding baccalaureates frequently reveal undistinguished or extremely poor academic records, sufficient to disqualify them from entry into an American medical school. Consistent documentation was not available to provide an overall statistical profile of academic achievement among these physicians. By way of illustration, the transcripts of only 34 physicians provided cumulative GPAs. Among these only 12% (or four out of the 34) had an overall grade point average of 3.30 or higher on a scale of 0 to 4.

The following brief profiles of physicians are taken from the pool:

I.G. was academically dismissed from one undergraduate institution before earning a B.S. in biology. He had an overall grade point average of 1.45. He received his M.D. at a foreign medical school, as yet unrecognized by that country's government. Upon receiving temporary ECFMG certification and successfully completing the state licensing exam (FLEX), he was licensed in another state. He has subsequently applied to practice medicine in New Jersey.

Q.B., the product of four different colleges, was repeatedly on academic probation during his undergraduate career, receiving (among other grades) 3 F's, 5 D's and 7 withdrawals. Entering a foreign medical school without a degree, he subsequently graduated with honors--within the top 10% of his class.

P.A. a graduate of a four-year vocational high school, enrolled in a medical school within his native country. Having consistently failed the mathematics, physics and liberal arts courses in the pre-med curriculum, he nevertheless matriculated through the medical school's four-year curriculum. He was given credit for the failed courses on the very month he graduated.

The problems of some medical schools' standards extend beyond admissions policies to the medical education process itself, with its underlying administrative policies and standards. The deficient undergraduate education found acceptable by the some foreign medical schools is often perpetuated by their internal standards, especially those for transfer students. For instance, many transfer students' academic deficiencies are often obscured and compounded by the medical schools' practice of convalidation, the granting of credit for previous study. Most commonly, candidates received credit for courses not comparable to the medical curriculum entered. One individual who had originally enrolled in a U.S. medical school, earning 4 F's and failing Part I of the National Boards, continued his medical education at a foreign medical school which ostensibly granted him credit for those four failed courses.

This practice is particularly disturbing since 34% of the FMG applicants had attended more than one medical school. The vast majority of these individuals had attended Caribbean medical schools. Some had transferred as many as three times during their medical training, attending four different schools with varying curricula. All appear to have transferred for one of three reasons: the closure of the medical school in which they were enrolled (usually by the governing authorities); the achievement of a poor academic record, frequently resulting in expulsion; or access to a medical school whose program permitted clinical clerkships in U.S. hospitals. Such transfer in the U.S. medical educational system is very rare, and never permitted during the final fourth year.

The frequency of transfer among medical schools contributes to perhaps the most readily documented deficiency in the education of many foreign medical graduates: a fragmented medical education. Nearly two-thirds of the FMGs (65%) had performed some portion of their clinical rotations in U.S. hospitals. This bifurcation of didactic and clinical education means that faculty and administrative oversight was noticeably absent during the structuring of the clinical programs. Students often arranged their own clinical clerkships--frequently at hospitals whose residency programs in one or more specialties required for core clerkships were

not approved by the Accreditation Council for Graduate Medical Education (ACGME), a nationally recognized accrediting body in the U.S. In fact, almost two-thirds (65%) of these individuals had participated in clerkships in medicine, surgery, pediatrics, and obstetrics/gynecology in hospitals which had no ACGME approved residency programs in these disciplines.

In brief the deficient educational preparation of these physicians raises disturbing questions about the professional abilities of many FMGs appearing before the New Jersey State Board of Medical Examiners and the educational quality of many foreign medical schools issuing diplomas. The frequency of transfer between medical schools and the prevalent bifurcation of didactic and clinical training indicate a severely fragmented educational experience.

Without the evaluation mechanism of an accrediting body such as the Liaison Committee on Medical Education (LCME) to assure the public of the foreign medical schools' educational standards, such indicators of questionable physician training are cause for serious concern. All of these factors affecting the education of physicians create a diminished confidence in the foreign medical diploma, and an increased administrative burden for the Board of Medical Examiners (BME).

Until recently, New Jersey has been able to rely upon the high admission standards employed by U.S. medical schools and established foreign medical schools to assure the quality of its physician licensure candidates. However, applicants who have earned their M.D.s from some foreign medical schools--particularly those recently established--have not been subject to a comparably rigorous admission and educational process.

The State's Pool of Unlicensed Physicians

The licensure review process unearths individuals with deficient credentials, frequently illustrating the need for more stringent educational standards. Such individuals, unable to qualify for a plenary license, may remain in the state, however, creating a pool of unlicensed physicians. While New Jersey, like other states, lacks reliable information on the number of unlicensed physicians within its borders, several indicators suggest a growing number of such physicians.

As noted earlier, 51% of the residents in New Jersey hospitals in 1985-86 were graduates of foreign medical schools. Historically, upon completion of graduate medical training, many of these residents apply for a plenary license to practice medicine in New Jersey. As a group, FMGs in the state, when compared with graduates of U.S. schools, have demonstrably more deficiencies in their undergraduate and medical school training when they apply for a medical license. As a result FMGs have greater difficulty meeting licensure requirements. This fact increases the chances that some of these individuals will become members of the unlicensed pool.

The failure rates on the official medical licensing examination in New Jersey are also an indicator of an existing pool of unlicensed physicians in the state. Table III presents data on the failure rate for each administration of the FLEX examination in New Jersey since 1980. Failure rates have been high. In addition, since 1983 an average of almost half of the test takers had previously failed the test and were taking it again. Between 1983 and 1986 the percentage of these repeaters varied from 41% to 59% per administration of the test.

TABLE III

FLEX examination Failure rate per administration for New Jersey

TEST DATE	NUMBER OF EXAMINEES	PERCENT FAILED
June 1980	244	56%
December 1980	202	66%
June 1981	257	55%
December 1981	245	62%
June 1982	372	50%
December 1982	325	41%
June 1983	351	42%
December 1983	256	64%
June 1984	305	56%
December 1984	261	64%
June 1985	211	60%
December 1985	245	72%
June 1986	295	51%

In summary, data on the continuing high percentages of FMGs training in the state and failure rates on the FLEX examination indicate that significant numbers of unlicensed physicians currently reside in New Jersey.

New Jersey Board of Medical Examiners Activity

A review of the New Jersey State Board of Medical Examiners' activity summaries for the years 1979 to 1986 indicates the growing demands placed upon the board. In 1979 the BME suspended or revoked 26 licenses. In 1982 the number grew to 33 and in 1983 it rose to 42. The past three years have shown a similar trend: 36, 42 and 33 respectively. Investigative activity has also increased. In 1979 the Board reviewed 70 investigative reports for violations. Just one year later the number had more than doubled to 153. The number of investigations peaked in 1982 at 228 and since then has averaged 175 reports per year.

Another clear illustration of increased board investigative activity is the substantial rise in the number of personal appearances made before the board by physicians. In 1980 there were 199 physician appearances. The number rose sharply in 1983 to 250 appearances and has remained high. There were 307 appearances in 1984, 325 in 1985 and 290 in 1986.

The Office of the Attorney General for New Jersey assigns Deputy Attorneys General (DAGs) to the BME to act as prosecuting attorneys for matters officially filed as complaints. Since 1980 the number of DAGs has doubled from two to four. According to one DAG, even without subsequent filing of additional complaints, the backlog of cases would take six to eight months to clear up.

To summarize, national concerns regarding the educational backgrounds of some recent physician graduates, and the special acuteness of the situation in New Jersey, suggest that the time has come to re-examine carefully licensure requirements for prospective physicians. Coupled with rapid changes in modes of health care delivery and expanding knowledge and new

technology, a renewed focus on strengthening the educational preparation of licensees can help to assure high quality health care in the future.

The following chapters examine the issues outlined here and recommend actions to strengthen educational and licensure requirements for physicians in New Jersey within the context of both the increasingly complex health care environment in which physicians practice and the rising expectations of the public regarding their performance.

PHYSICIAN EDUCATION

In an attempt to address growing concerns regarding the qualifications of applicants for a plenary license, the New Jersey Board of Medical Examiners has responded with more stringent regulations, both enacted and proposed, since 1983. *However, the core of New Jersey's licensure standards, the statutes which mandate the minimum education requirements--and in some cases which allow licensure to questionable candidates--have remained virtually unchanged since 1921. In fact, because the statute establishes such minimum standards, in many cases the Board of Medical Examiners has no legal choice except to issue a plenary license to a marginally educated physician.* (See Appendix B for a more detailed description of New Jersey's physician licensure statute.)

With respect to the statute itself a number of issues regarding the education and certification of physicians must be examined. First of all, modern medical education is a continuum that begins with pre-medical education and, after licensure, often includes yearly continuing education activities. Historically, the U.S. medical education system has developed standards of excellence for each training stage that are widely accepted internationally. However, some aspects of the sequence are being re-examined with regard to their responsiveness to changing realities. The rapidly changing medical practice environment has motivated some medical educators to call for modifications in pre-medical and medical education. While an assessment of these two phases is essential, the completion of this eight-year sequence provides only the fundamentals of preparation to practice medicine.

Graduate medical education, or residency, is widely accepted as the final entry point into the medical profession. In light of this, the length of time and scope of graduate medical education necessary as adequate preparation for licensure require careful consideration. Approximately 93% of U.S. medical licensing boards now require completion of accredited residency training, usually a minimum of one year, before issuing a license.

Specialty board certification is the ostensible outcome of graduate medical education. Physicians who complete a specified period of residency training in a given specialty are considered "board-eligible", that is, qualified to take the specialty examination; upon passage they become board certified. Whether or not board eligibility or board certification should be required for licensure is a matter deserving serious thought and discussion.

Finally, there is the question of the role of continuing medical education (CME) in the licensure process. CME is designed chiefly to keep physicians' knowledge updated. However, it can also be used to assess and remediate weaknesses in practice skills. Some licensing authorities have linked CME and license renewal as a means of encouraging physicians to upgrade their knowledge and skills continually.

Another prominent feature of the medical education continuum is a series of certification examinations. Aspiring physicians usually must submit scores on the Medical College Admission Test (MCAT) as part of their application to medical school. Medical students and graduates in U.S. schools normally must make acceptable scores on the examination given by the National Board of Medical Examiners (NBME) in order to progress to the next stage of their education. Foreign medical graduates must pass the Foreign Medical Graduate Examination in the Medical Sciences (FMGEMS) to receive certification from the Educational Commission for Foreign Medical Graduates (ECFMG) and participate in residency programs. Other

certification processes are also required under some circumstances; for example, the FLEX or Federation Licensing Examination of the Federation of State Medical Boards for foreign physician graduates who seek licensure in some states, and the certifying examinations given by many specialties.

The proper use of standardized examinations as evaluation tools for testing the competencies of physicians is currently a topic of much debate. Historically, medical training programs have been responsible for educating students in the art and science of medicine and licensing boards have been responsible for determining who shall be licensed. Both types of organizations have used standardized examinations to assess and document whether or not a physician possesses both basic science knowledge and the clinical skills necessary for the practice of medicine. The appropriate application of this multi-faceted certification process deserves serious consideration.

Pre-medical Baccalaureate Education

Physician education begins at the undergraduate level. Normally, students who aspire to enter medical school enroll in and complete a baccalaureate degree program that includes courses which meet the specific requirements for admission to medical school. Traditionally, these programs have included heavy emphasis on courses in the natural sciences and have been designed to prepare students for the rigors of basic science education during the first two years of medical school. However, in recent years, new perspectives have emerged regarding the appropriate content of baccalaureate education in general, and preparation for medical school in particular.

In 1984 the Association of American Medical Colleges issued a report culminating a three-year study of the major issues in contemporary pre-medical baccalaureate and medical education. Prepared by a Panel on the General Professional Education of the Physician (GPEP), the report, *Physicians for the Twenty-First Century*, concluded that physician education would benefit from reforms that would help students adapt to the changing circumstances that they will encounter in the future. The report argued that medical schools have overemphasized science based pre-medical preparation, that it has become, in effect, a premature form of specialization. The panel urged that undergraduate education encompass broad study in the social sciences and the humanities as well as the natural sciences. In addition, the panel strongly recommended that interwoven throughout these studies should be a continual emphasis on effective writing characterized by accurate grammar and sound analysis. Such broad based preparation should provide future practitioners with lifelong learning skills that will enable them to keep pace with the continuing rapid growth in knowledge and technology.

Pre-medical study should establish the base of knowledge necessary to facilitate incorporation of the increasingly complex information encountered in medical school, graduate medical education, and practice. Physicians who do not have the equivalent of four years of pre-medical education have not developed the broad academic foundation necessary to understand modern society or to integrate the scientific information base upon which contemporary medical practice is predicated.

Current New Jersey statutes require a minimum of only two years, or 60 academic credits, of pre-medical education for licensure as a physician. Because today's physician must have a comprehensive understanding of both the basic sciences and the humanities, acquired through a broad-based baccalaureate education, these requirements are insufficient.

Recommendation #1

Physicians applying for a plenary license in New Jersey should possess a baccalaureate degree, or its equivalent from an institution recognized by a regional accrediting association in the United States or appropriate educational authorities in a foreign country as approved by the Board of Higher Education. This pre-medical study should represent a minimum of 120 academic credits (or foreign equivalent as determined by the Board of Higher Education), include a broad range of courses in the social sciences and the humanities as well as the study of chemistry, physics and biology. A sufficient pre-medical education should also include the development of appropriate communication skills in English.

The implementation of this recommendation will align New Jersey's licensing criteria with the minimum admissions standards for students seeking entry into U.S. medical schools. Additionally, this requirement may deter physicians with substandard educational backgrounds from applying for licensure. Most important, a broad undergraduate background promotes a humanistic orientation necessary for practitioners increasingly confronted with difficult ethical issues in the care of patients.

Medical Education

While reform minded medical educators have made important suggestions for restructuring baccalaureate education and medical school admissions policies, they have placed their greatest emphasis on improving education in medical school. At present, medical education programs are offered by 127 accredited U.S. medical schools through a rich diversity of institutions and faculties with a great degree of variance in their curricula. The high quality of physician education currently being offered by these institutions is acknowledged around the world.

Medical education in the United States occurs through four academic years of instruction in basic sciences and clinical medicine. Traditionally, the basic sciences of anatomy, physiology, microbiology, biochemistry, pharmacology, pathology, and behavioral sciences are taught during the first two years of medical school. The teaching of clinical medicine during the final two years is based upon the clerkship model, in which students learn through participation in the care of patients. Clerkships involve students rotating through clinical departments in teaching hospitals affiliated with medical schools. Medical school clinical faculty in the hospital teach students the basic tenets of patient care and closely supervise the students' clinical activities. Virtually all medical schools require that students perform clerkships in the core clinical disciplines of medicine, surgery, pediatrics, obstetrics/gynecology, and psychiatry. In addition, most schools offer a variety of elective clerkships in specialties and subspecialties of the core disciplines. (For a more detailed discussion of the development of medical education in the United States, see Appendix A.)

Recommendations for reforming medical education do not involve major changes in existing Liaison Committee on Medical Education standards concerning medical school faculties and facilities. The important issue is revising the educational process to reflect two facts. First, the environment within which physicians practice will undergo continual change, especially because of increased knowledge and the use of technology. Second, most graduating physicians will engage in three or more years of graduate medical education. (According to a

recent Association of American Medical Colleges survey, 97% of 1986 U.S. medical school graduates will continue their education in residency programs.)

In today's complex health care environment, transformed continually by biomedical, technological and economic influences, a physician's medical education must be thorough and sophisticated. The four-year model of Liaison Committee on Medical Education accredited medical schools, while periodically adapted to incorporate advancements in science and technology, assures that physician graduates have received comprehensive exposure to both basic and clinical sciences. Given the rapid growth in biomedical knowledge in recent years a four-year program is the minimum necessary for preparing medical students to enter residency training.

Recommendation #2

In addition to holding the equivalent of a baccalaureate degree, all physicians seeking a plenary license in New Jersey should be graduates of a comprehensive medical education program of not less than thirty-two months duration offered over a period of four academic years. The only exceptions permitted should be for graduates of experimental, e.g. Ph.D./M.D. or articulated undergraduate/medical education programs approved by the Liaison Committee on Medical Education.

The GPEP report acknowledges the continuing viability of the four-year medical education program. However, it recommends that the basic sciences taught in the first two years be more explicitly reinforced and applied during clinical clerkships and that clinical applications of basic science knowledge be incorporated into basic science course work. The two components of medical study should be consistently integrated and reinforced--with the clinical portion undertaken at a teaching hospital closely affiliated with and located near the medical school. Basic science and clinical faculty should work in close collaboration to strengthen the curricular impact of the mutually reinforcing aspects of their disciplines. Liaison Committee on Medical Education standards emphasize close supervision of student learning by medical school faculty throughout all four years. *Physicians for the Twenty-First Century* stresses not only the importance of integrating the clinical and didactic portions of medical education, but also the critical role that faculty play in continual monitoring and evaluating of student achievement.

The need to integrate better the basic and clinical sciences during the medical school years cannot be overstressed. A significant percentage of foreign medical graduates who have appeared before the New Jersey Board of Medical Examiners with questionable educational credentials have undertaken some portion of their clinical clerkships in U.S. hospitals. For some of these physicians administrative oversight and clinical assessment by faculty of the parent medical school was lax or absent. In numerous cases the physicians had actually arranged their own clerkships. The bifurcation of basic sciences and clinical clerkships which is the hallmark of this approach to medical education is simply not adequate for educating physicians for the twenty-first century. Curricular integration of the basic and clinical sciences is virtually impossible. Involvement of basic science faculty in the clinical education of students and participation by clinical faculty in the development and refinement of basic science instruction is precluded by distances of hundreds or thousands of miles. Permitting or encouraging the continuation of this medical education model only prolongs the time before the educational backgrounds of New Jersey's physicians consistently exhibit the continuity and excellence which contemporary medical practice requires.

Recommendation #3

The Board of Medical Examiners should discontinue the policy of allowing foreign medical schools to conduct clinical clerkships in New Jersey hospitals. This should be accomplished by allowing the "clinical training rule," N.J.A.C. 13:35-1A, to expire in accordance with the provisions of Executive Order #66, the Sunset Order, in July 1988. Students enrolled in such programs prior to January 1, 1988 should be permitted to conclude their medical education before authorization of these clerkships is discontinued. To be eligible for a plenary license in New Jersey, applicants who have completed clerkships in other states under the auspices of a foreign medical school must have taken those clerkships in a hospital that has a residency program accredited by the Accreditation Council for Graduate Medical Education in each discipline in which clerkships were taken for academic credit.

Graduate Medical Education

In the current health training environment the medical degree is not a terminal document but rather a certificate that allows a physician to begin advanced studies in the medical sciences. Therefore, an essential purpose of medical education is the mastery of a broad range of clinical skills with the goal of having students acquire a sound factual, conceptual, and integrated clinical foundation for the more specialized training they will receive during the graduate medical education years.

In the United States graduate medical education (GME) is essential for entry into the medical profession. In fact, only Maine, Missouri, Ohio and Tennessee do not require a minimum of one year of GME to be eligible for licensure. This requirement emphasizes the residency years as the stage at which physicians train for the independent practice of medicine. The professional specialty organizations, medical schools, the Accreditation Council for Graduate Medical Education, and hospital program directors generally agree that even the most proficient medical school graduate's clinical competence is insufficient to provide care as an independent practitioner.

Comprehensive graduate medical education begins with graduation from medical school and ideally ends with the fulfillment of those requirements necessary for certification in a specialty or subspecialty practice. The period of residency training reflects the high standards that the U.S. medical education system has for physicians. Graduate medical education programs are subject to quality assessment and periodic review by the Accreditation Council for Graduate Medical Education (ACGME), a collaborative effort of the American Medical Association and the various specialty societies. The vast majority of residency programs provide both didactic and clinical practice experiences in one of 24 specialties and 42 subspecialties. The period of training ranges from three to eight years depending upon the specialty. Certification as a specialist, while not required for licensure, is the result of successful completion of residency training and passage of a specialty examination. Certification is viewed by the profession as the desired outcome of graduate medical education. In general, the majority of the medical profession now regards three years of specialized residency training as the necessary minimum for the independent practice of medicine.

From this viewpoint, the relationship between specialty certification and licensure merits examination. Licensure is a legal process by which a governmental agency grants permission to an individual to engage in a given occupation. The applicant must meet certain requirements as set forth in the law before the license is granted. On the other hand, specialty certification usually results from a professional group's granting recognition to persons who have demonstrated that they are qualified in a specialized field of activity. Certification as a physician specialist is a two stage process. First, successful completion of an accredited residency program results in "board eligibility". To achieve board certification (diplomate status), the physician must successfully pass the national examination given by the relevant specialty board. Most boards award permanent certification but some boards do require periodic recertification. In general, the requirements for specialty certification and recertification are rigorous and thorough. Successful completion of these requirements indicates both the quality of a residency program and the qualifications of the physician who underwent the training. There are important incentives for physicians to become board certified. It is considered a highly prestigious credential among physicians. Some hospitals demand that physicians be at least board eligible before they can admit patients or have operating room privileges.

Since most physicians undergo specialty training, perhaps licensure and specialty certification should be specifically linked. However, licensing jurisdictions have historically licensed undifferentiated general practitioners. No state currently licenses physicians based on their certification as a specialist. Some states do accept certification or recertification by specialty boards as meeting the requirements for licensure reregistration.

Several obstacles exist to requiring board certification for initial licensure. While most physicians undergo some form of specialized training through graduate medical education, many do not become board certified. According to the American Medical Association, nationally only 50% of all physicians are board certified. In New Jersey the figure is 49%. Licensure requiring board certification would seriously affect the supply of physicians in many jurisdictions. In New Jersey the problems created could be critical. The state has traditionally relied heavily upon foreign medical graduates to provide health services. Based on AMA data only 33.6% of New Jersey's FMGs are board certified.

Licensure requiring board certification would also create new administrative problems for licensing boards that are already overburdened with extensive caseloads and work backlogs. Finally, many specialists render primary care along with specialty care. It would be inaccurate to define them only in terms of their specialty domains. Given all of these obstacles, implementing a policy requiring board certification for initial licensure is problematic.

However, it is feasible to require that physicians demonstrate that they are competent to practice medicine through successful completion of at least three years of postgraduate training in an accredited program. Currently, New Jersey requires this of graduates of foreign medical schools. Since GME training refines the clinical competencies of all physicians, this regulation should be applied to all licensure applicants.

Recommendation #4

To be eligible for a plenary license in New Jersey all physicians who graduate from medical school after January 1, 1987 must demonstrate successful completion of a minimum of three years of approved graduate medical education.

An exception to the general educational requirements that have been recommended may need to be made occasionally to accommodate the licensure of alien physicians who have immigrated to the United States for personal or professional reasons or as a result of religious persecution or political turmoil in their native countries. Such physicians have provided medical care in their countries of origin, and after appropriate verification of their credentials, they can add to the health care resources of New Jersey.

Recommendation #5

Physician immigrants to the United States who have a history of successful medical practice in their native countries should be eligible for a plenary license in New Jersey. To receive a plenary license they should provide proof that they have satisfactorily completed all educational requirements for licensure in their country of origin. Political or religious refugees who are unable to produce original documentation of their medical education credentials should continue to be considered for a plenary license by the Board of Medical Examiners. Successful completion of three years of BME approved graduate medical education in the United States or its equivalent as determined by the Board should be required of immigrant physicians seeking a plenary license in New Jersey.

Continuing Medical Education

Licensed physicians have traditionally used continuing medical education (CME) to keep abreast of clinical and scientific advances. In the past, continuing medical education has been criticized by some medical educators for being unable to provide assurances that the majority of training activities directly enhance the competencies of physicians. Improvements in the past six years concerning the CME process and the quality of program offerings have altered this perception.

The CME structure at the national and state level has become better organized. The Accreditation Council for Continuing Medical Education (ACCME) accepts primary responsibility for surveying and accrediting sponsors of CME activities designed for a national or multistate audience of physicians. Data indicate that in 1986 there were 460 ACCME accredited sponsors including 123 medical schools, 164 specialty societies, 22 hospitals, 17 state medical organizations, 14 voluntary health organizations and 120 termed "other".

State medical societies use basically the ACCME standards and procedures for accrediting intrastate providers of CME. In fact, state accredited sponsors are included in the ACCME national list of accredited institutions and organizations. In 1986 the state medical societies accredited 1,861 institutions and organizations as CME sponsors. Seventy-five percent of these sponsors were hospitals.

Today, CME is used both to keep physicians apprised of advancements in knowledge and technology and to assure the public, through periodic assessments, that doctors meet some predetermined minimum standard for the independent practice of medicine. The expanding role of state governments in monitoring and regulating the medical profession has also helped broaden the scope of continuing medical education. There are currently 27 states and territories that legislate CME requirements for reregistration of the license to practice medicine. The assumption is that medical doctors should not be licensed for life and that a reregistration process is essential for maintaining practice skills.

There is great variation in the continuing education needs of physicians. For example, the physician primarily involved in teaching and research has needs that differ from the general practitioner or the doctor engaged in a specialty practice. Consequently, CME programs are usually designed to serve numerous purposes. Most states, particularly those that mandate CME, have delineated categories of credit that list acceptable types of continuing education activities. The majority of CME programs allow a licensee to obtain a pre-determined number of credits in several categories, including participation in accredited educational and scientific CME courses; completion of specialty board certification or recertification examinations; publication or presentation of original papers; teaching or research activities on some systematic basis throughout the academic year; or receipt of a valid American Medical Association Physician's Recognition Award (AMAPRA) certificate during the reregistration or CME certification period.

At present, New Jersey does not mandate continuing medical education. The Board of Medical Examiners is considering a proposal requiring that physicians holding an unrestricted license submit, every three years, evidence of satisfactory completion of 150 CME credits. In order to meet the varying professional needs of licensed physicians in the state, consideration might be given to instituting a program that offers a variety of approaches to meeting the CME requirements. Undoubtedly, as the complexity of medical practice increases, the need for continuing medical education will grow commensurately.

Recommendation #6

Physicians seeking relicensure in New Jersey must complete successfully 150 credits of approved continuing medical education every three years. The current relicensure cycle should be changed to a triennial basis.

Traditionally, discrete academic disciplines have been taught at specific stages of medical education; for example, anatomy is normally taught during the basic science sequence. However, the expansion of knowledge in all academic disciplines means that physicians must now continually absorb new knowledge in a variety of disciplines regardless of their stage of training. Indeed, some disciplines such as medical ethics and law pervade the entire medical education continuum from pre-medicine to continuing medical education.

Rapid advances in medical science and technology are challenging today's physicians with a host of new and complex ethical and legal problems related to appropriate patient care. Techniques of *in vitro* fertilization, the emergence of surrogate motherhood, the practice of organ transplantation, use of artificial hearts and the increased availability of sophisticated life support systems all confront the contemporary physician with dilemmas having both legal and ethical dimensions.

If physicians are to handle these problems competently, they must know how to incorporate ethical and legal perspectives in their clinical decision making. Approximately 80% of all LCME accredited medical schools presently report some instruction in ethics and medical law. Likewise, the National Boards (Part II) and the FLEX have test items on ethics and law. However, medical education must systematically prepare physicians at every step to deal with these difficult issues.

Recommendation #7

At every stage of physician education--pre-medical, medical, residency training and continuing medical education--increased emphasis should be placed upon the legal and ethical issues in contemporary medical practice and professional behavior.

All physicians need to become increasingly knowledgeable about the ethical and legal implications of situations they may confront as practitioners and decisions they may be called upon to make as providers of care. The medical education continuum provides many opportunities for the inclusion of appropriate study of legal and ethical issues in the health care environment of today and the future.

To summarize, beginning with the baccalaureate education of pre-medical students, through medical school, graduate medical education, and CME activities for the licensed physician, the education of the modern physician never ceases. In the U.S., medical education is necessarily a continual process whereby physicians acquire and maintain acceptable medical practice competencies within a health care system that is being continually challenged by new knowledge, expanding technology, and increasingly complex ethical and legal issues in patient care.

THE CERTIFICATION PROCESS

Physician licensure statutes assume that the medical education continuum includes only the most highly qualified individuals who are selected for medical school and trained to be both clinically competent and adaptable to the ever changing medical practice environment. There is also an assumption that these individuals are formally evaluated at periodic stages by means of a structured certification process. The goal of this certification process is to have medical students and physicians in training demonstrate that they have acquired those competencies necessary to begin the next phase of their career, be it further training or an application for a license to practice medicine.

Throughout their lengthy education physicians are formally evaluated and certified at periodic intervals with a variety of examinations and assessment methodologies. Medical schools and their faculties directly assess the outcomes of the educational activities in their curricula. There is also a sequential series of external examinations developed by agencies not directly affiliated with the medical schools. Most of these tests are comprehensive, standardized multiple choice examinations. They are used for a number of purposes including evaluation of medical students, assessing the effectiveness of medical school curricula, certifying the qualifications of graduates of foreign medical schools and licensing physicians to practice medicine. Viewed sequentially these periodic external examinations comprise a certification process.

In general, the certification process assures the public that physicians are competent and their training credentials valid. Standardized examinations play a major role in providing this assurance. While there is some debate concerning how standardized tests can be optimally used at each training stage, it is widely accepted that the examinations validly assess the specific knowledge and skills that they are designed to measure.

The Medical College Admission Test

Individuals desiring to train in U.S. medical schools can look forward to both years of intense study and frequent assessments of their adequacy to progress to the next stage of education. The assessment process formally begins with the Medical College Admission Test (MCAT) which has been designed to assist medical school admission committees in the evaluation of candidates applying to U.S. medical schools. The test is administered by the American College Testing Program (ACT) at the direction of the Association of American Medical Colleges (AAMC). The MCAT reports six scores per administration, one each in Biology, Chemistry, Physics, Science Problems, Skills Analysis: Reading, and Skills Analysis: Quantitative. Scores are reported on a scale ranging from 1 (low) to 15 (high).

Medical schools vary in the extent to which they use MCAT results in admission decisions. However, virtually all schools use a combination of other information in conjunction with MCAT scores. This includes undergraduate records, grade point averages, references and the results of personal interviews. *Physicians for the Twenty-First Century* recommends that MCAT scores not be the predominant factor in making admission decisions, but that they be one of a number of contributing factors.

Consistent with the trend toward emphasizing a more broadly based undergraduate background, the MCAT has been criticized for reinforcing excessive emphasis on conventionally required science courses of biology, chemistry and physics. In response the AAMC added a 45-minute essay section in 1985 to provide an opportunity for medical school candidates to demonstrate their analytical and writing skills.

The National Board of Medical Examiners

After admittance to U.S. medical schools, students are required to take a progressive series of nationally standardized certifying examinations developed and administered by the National Board of Medical Examiners (NBME). Only students officially enrolled in medical schools accredited by the Liaison Committee on Medical Education are eligible to sit for the National Board Examination. Part I of the National Boards is a two-day written multiple-choice examination in the basic medical sciences and includes questions in anatomy, behavioral sciences, biochemistry, pathology, pharmacology and physiology. The questions are designed to test knowledge and aspects of discrimination, judgment and reasoning. Part II is also a two-day written multiple-choice examination. It covers the clinical sciences and includes questions in internal medicine, obstetrics and gynecology, pediatrics, preventive medicine and public health, psychiatry and surgery. The questions cover the broad spectrum of knowledge in each clinical area. There are also specific questions that explore the examinee's ability to assess clinical problems.

Part III is a one-day examination designed to assess ability to use medical knowledge to solve a variety of clinical problems characteristic of the first year of residency training. This test is in three sections. The first two sections employ the multiple-choice format and the third uses a patient management problem format to evaluate knowledge and skills in diagnosis and management.

Historically, National Board examinees have consistently high pass rates on all three parts of the test. Table IV presents pass rates for the total examinee populations in 1984 and 1985. The data include first time takers as well as repeaters.

TABLE IV
National Board Examinations Pass Rates for 1984 and 1985

Examination	TOTAL NUMBER TESTED		PERCENT PASSED	
	1984	1985	1984	1985
Part I	16,825	16,627	85%	84%
Part II	14,440	14,329	97%	98%
Part III	12,817	13,351	98%	98%

According to the NBME the annual pass rates from 1980 through 1985 have ranged from 82 to 86 percent for Part I and have been at 97 or 98 percent for Parts II and III.

Successful completion of the National Boards is one of the major avenues to licensure. All U.S. medical licensing authorities, except Louisiana, Texas, and the Virgin Islands, will grant a license, without further examination, to those candidates who have National Board Certification.

The Foreign Medical Graduate Examination in the Medical Sciences

Graduates of foreign medical schools are not eligible to take the National Boards. The Educational Commission for Foreign Medical Graduates (ECFMG) was founded in 1956 as an evaluation service for physicians who had completed their training at foreign medical schools. The ECFMG administers a program of certification that assesses the readiness of foreign medical school graduates to enter residency or fellowship programs. To gain ECFMG certification, graduates of foreign medical schools must pass the Foreign Medical Graduate Examination in the Medical Sciences (FMGEMS) and an English language proficiency test administered by the Commission, and document completion of the educational requirements to practice medicine in the country in which they received their medical education. Since its inception, the Commission has examined nearly 400,000 candidates and certified approximately 130,000 physicians.

Over the years increasing concern arose regarding whether or not the examination originally administered by the ECFMG was of comparable rigor to the National Board examinations. Consequently, the Foreign Medical Graduate Examination in the Medical Sciences (FMGEMS) was developed by the National Board of Medical Examiners at the direction of the ECFMG to replace the previously administered examination. First given in 1984, the FMGEMS is derived from the pools of National Board of Medical Examiners test items. The Secretary of Health and Human Services officially accepts the test as psychometrically equivalent to Parts I and II of the National Boards.

Table V reports the results of four administrations of the FMGEMS for both U.S. citizens and alien graduates of foreign medical schools. The data include both first-time takers and repeaters. Day 1 is a basic medical science test consisting of approximately 500 items from the disciplines of anatomy, behavioral sciences, biochemistry, microbiology, pathology, pharmacology and physiology. Day 2 is a clinical science test consisting of approximately 450 items from the disciplines of internal medicine, obstetrics and gynecology, pediatrics, preventive medicine and public health, psychiatry and surgery.

TABLE V
Foreign Medical Graduate Examination in the Medical Sciences
Pass Rates 1984-1986

Examination Date	Number Tested	Percentage Passing		
		Day 1	Day 2	Both Days
July 1984				
U.S. FMGs	2,534	16	21	4
Alien FMGs	9,853	23	49	20
January 1985				
U.S. FMGs	2,672	15	20	3
Alien FMGs	10,345	19	40	15
July 1985				
U.S. FMGs	3,540	20	29	6
Alien FMGs	12,006	22	41	18
January 1986				
U.S. FMGs	2,893	11	26	4
Alien FMGs	10,575	17	42	13

As the table indicates, the pass rates for both U.S. and alien foreign medical graduates are significantly below the pass rates of students and graduates of U.S. medical schools on the National Boards.

The Federation Licensing Examination

Prior to 1968 each licensing jurisdiction had constructed its own examination for licensure purposes. In 1968 the Federation of State Medical Boards (FSMB), with the assistance of the National Board, established the Federation Licensing Examination (FLEX) program to provide a standardized examination that all licensing authorities could use as an assessment tool for physician licensure. In particular, the use of one examination created a more rational basis for interstate endorsement.

In 1985 a new two-component FLEX program was introduced. The new FLEX focuses on the specific knowledge and skills necessary for medical practice in both supervised and independent settings. Component one evaluates measurable aspects of the examinee's knowledge of basic and clinical science principles with a special emphasis on problems encountered in supervised settings such as hospitals. Component two places special emphasis on the core of competencies that examinees need to diagnose and manage clinical problems encountered by physicians licensed for the independent practice of medicine. The new FLEX emphasizes testing physicians for the general unrestricted practice of medicine. It is administered twice annually, in June and December. In order to be licensed examinees must achieve a passing score on each component.

In recent years there has been considerable discussion concerning the role that external examinations should play in the overall medical education assessment process. Some critics have stressed the need for greater assurances that the examinations represent the most valid sampling of knowledge and skills for the various basic science and clinical disciplines. In particular, the need to assess more accurately the clinical competencies of physicians is being presented as a problem requiring urgent special attention.

A number of specific initiatives are underway to enhance the quality and validity of the standardized examinations used to certify physicians. The National Board of Medical Examiners (NBME) is planning to introduce new comprehensive certifying examinations in 1989. The tests are being designed to reflect the medical knowledge, scientific principles and clinical skills that students need to engage in the further learning activities that they will be exposed to throughout their education. The NBME is also developing subject examinations that would focus upon the need of medical schools to assess academic achievement in specific content areas.

In the area of clinical assessment the Educational Commission for Foreign Medical Graduates is considering the feasibility of requiring a Clinical Skills Assessment examination as part of its certification process. Concomitantly, the National Board is experimenting with computer based clinical simulation models. One model presents the examinee with a clinical problem and a wide range of diagnostic and patient management actions. The computer maintains a record of each action taken and provides insights regarding the quality of care that the physician has chosen to provide.

The current progressive certification of the achievement of medical students and physicians plays an important part in assuring the public that physicians are adequately prepared to offer high quality medical care. Comprehensive standardized examinations are a major aspect of this process and they are being continually refined. Since the validity and reliability of these tests have been affirmed, they serve an important function. Additionally, there should be a limit upon the number of times that these examinations can be taken. Data on testing indicate that examinees are less likely to succeed as the amount of time between the examinations and those experiences that prepare them for the exams increases. In the case of physicians this problem is critical. The physician who repeatedly fails a licensure exam is unable to practice and maintain clinical skills.

Recommendation #8

To be eligible for primary (initial) licensure in New Jersey a physician should have passed the National Board of Medical Examiners' Examination (NBME), or the Federation Licensing Examination (FLEX) within three attempts. Individuals required to take the Foreign Medical Graduate Examination in the Medical Sciences (FMGEMS) must also have passed within three attempts. Examinees who have failed three times should be permitted to retake the relevant examination upon presentation of proof that they have completed appropriate remedial education and/or training since their last failure.

A critical component of the certification process is assessment of clinical competence of medical students and residents. U.S. medical school faculty play a major role in assessing and providing formal feedback concerning the clinical competencies of their students; Part III of the National Boards is an external examination designed to assess graduates' ability to handle

clinical problems and issues. Thus, the certification process for U.S. trained physicians is a comprehensive one and provides ample data concerning their abilities in managing medical problems. The same is not always true for physicians who participate in the Educational Commission for Foreign Medical Graduates certification process. Often there is little documentation regarding the adequacy of their clinical skills; and the current certification procedures do not require such an assessment.

Recommendation #9

A clinical skills assessment component should be included in the Educational Commission for Foreign Medical Graduates certification process.

The New Jersey State Board of Medical Examiners and the Board of Higher Education enthusiastically support the efforts of the Educational Commission for Foreign Medical Graduates to develop a clinical skills assessment examination. In response to concerns that many FMGs entering residency programs and applying for licensure are deficient in clinical skills, the Educational Commission for Foreign Medical Graduates (ECFMG) is presently developing a test to demonstrate that ECFMG-certified FMGs have the level of clinical skills necessary to begin training in the first postgraduate year. The exam should be developed using U.S. medical graduates as the reference norm. If the test is found to be valid and reliable it should be formally incorporated into the ECFMG certification process. This would provide additional assurances that FMG applicants for residency training and licensure possess requisite clinical skills.

EPILOGUE

Medical education is a worldwide enterprise and there are many well established, high quality medical schools outside the United States. However, in the United States and in Canada the Liaison Committee on Medical Education accreditation process for medical schools and the use of external examinations and assessments by faculty combine to provide assurances that candidates for licensure have been evaluated using a broad base of factors. They include the quality of the medical education program, the results of comprehensive standardized examinations, academic records and the judgments of qualified and competent faculty. Also, these schools have at their disposal significant resources including highly qualified and specialized faculty, the latest in biomedical research and technology, and modern health care facilities. As a result of these factors the LCME accredited schools play an international leadership role in medical education.

Since foreign medical schools do not use a common set of assessment standards and procedures, the quality of many FMG licensure candidates' medical education cannot be readily ascertained. It is difficult to determine whether these physicians' medical education is comparable to their U.S. trained counterparts and whether it prepares them appropriately for advanced education and/or practice in the United States.

An urgent need exists for an evaluation and certification process to assess foreign medical education programs. At present, foreign medical schools are not eligible for participation in the Liaison Committee on Medical Education accreditation process.

Recommendation #10

The New Jersey Board of Higher Education and the New Jersey State Board of Medical Examiners urge that interested groups establish as soon as possible a process for assessing, reviewing and/or accrediting medical education programs in foreign medical schools as a guide to assist the Board of Medical Examiners in determining eligibility for licensure of foreign medical graduates .

The United States' exemplary system of medical education could guide the further development and improvement of medical education and health care delivery internationally. Interested groups, including the Educational Commission for Foreign Medical Graduates, the Federation of State Medical Boards, the World Health Organization, and the United States Department of Health and Human Services should seek to establish a program of assessment and accreditation for interested foreign medical schools whose graduates seek further education or licensure in the United States. Such a program would not only assure that foreign medical graduates are prepared adequately for U.S. medical education and health care systems but also present an opportunity for the United States to exercise leadership in improving the health status of the world's population.

APPENDIX A

The Development of Medical Education in the United States

An overview of the development of both the American medical school and the quality control and accreditation process for physician education provides a good vantage point for understanding how the medical education system works today and places in perspective recommendations for reform. The present system of exemplary American medical schools did not occur quickly, but rather is the result of a lengthy and costly evolution.

Significant reforms in U.S. medical education began to occur in the mid-to late 1800's. Previously many medical schools were proprietary institutions often owned by the professors who taught there. Their income was derived from student fees and ability to pay these fees was the most important entrance requirement. Most of these schools lacked structured educational programs, used the apprenticeship method to instruct, and had no specialized academic faculty, sequential courses, laboratory instruction, written exams or research activities.

Changes in medical education in the late nineteenth century took place mainly within the universities. By 1871 Harvard Medical School had implemented some significant reforms including a three-year program with nine-month terms and written exams. In 1877 the University of Pennsylvania Medical School was reorganized, with the faculty placed on salary and subjects arranged in graded sequence. By far some of the most radical innovations in American medical education occurred in 1893 with the opening of the Johns Hopkins Medical School. From its inception Hopkins had admissions standards, including the requirement of a bachelor's degree, and a four-year medical education program that combined two years of basic sciences instruction with two years of clinical training on the wards of the Johns Hopkins Hospital. Research was considered one of the primary missions of the school.

Johns Hopkins is traditionally considered to be the country's first modern medical school with one of its greatest contributions being the use of the hospital for organized clinical training using the clerkship model. This model, adopted from the European schools, made the medical student an active participant in the bedside treatment of patients. Many schools began to imitate Hopkins.

This trend was reinforced by Abraham Flexner in his landmark 1910 document *Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching*. Flexner identified 457 medical schools and actually visited 155 from this group. He evaluated them on the basis of entrance requirements, size and training of faculty, financial resources, laboratories and clinical facilities. Flexner found that many schools had very lax admissions standards, poorly trained and insufficient faculty, weak curricula and thoroughly inadequate library and laboratory resources. He recommended that the overwhelming majority of these schools be closed. The remaining institutions were to be strengthened based on the model of Johns Hopkins, that is, university based medical schools with a commitment to medical research and academic excellence.

By 1920 the American medical education system had embraced most of Flexner's recommendations and had established norms regarding the setting and the resources necessary to provide a sound medical education. The number of medical schools had been reduced to 76 by 1929. Using the Flexner model a comprehensive medical school program met the following criteria:

- A university based program with the full array of resources necessary to conduct medical education.
- Four years of sequential and integrated education including two years of basic sciences and two years of clinical training in an affiliated teaching hospital.
- Full-time research oriented faculty and clinical educators who serve as medical staff in the teaching hospital.

During the early stages of evolution of the modern U.S. medical education system, no unified and universal accreditation process existed. In 1942 the Council on Medical Education of the American Medical Association (AMA) and the Association of American Medical Colleges (AAMC) formed the Liaison Committee on Medical Education (LCME) to establish a uniform review process for medical schools. Osteopathic medical schools are accredited similarly by the Bureau of Professional Education established by the American Osteopathic Association in 1923. The responsibilities of the LCME and the AOA are to certify that programs leading to the M.D. or D.O. degree in the United States and Canada meet prevailing standards of medical education. They are recognized as voluntary accrediting bodies by the medical schools and their parent universities. LCME and AOA are also recognized by the United States Secretary of Education, the Council on Postsecondary Accreditation, the U.S. Congress in various health related laws and by state licensing boards.

The 15 members of the LCME include medical school faculty members, deans, teaching hospital executives, practicing physicians, medical students and individuals who provide a public perspective. Central to the extant philosophy regarding medical education is the conviction that basic and clinical scientists must collaborate within the same institution to effectively integrate basic science concepts and the study of the diagnosis and treatment of illnesses. Consequently, the committee considers for accreditation only complete four-year programs in medical education leading to the M.D. degree. The basic science component of a developing medical school is evaluated only when the degree granting institution is committed to establishing a complete program.

The current standards under which the LCME operates are delineated in *Functions and Structure of a Medical School*, most recently revised in 1985. Although the document contains general guidelines on program components such as curriculum, resources, and faculty, the accreditation process relies to a great extent on the exercise of professional judgment by qualified experts in medical education. In addition to awarding full or provisional accreditation to new medical schools, the LCME also monitors and re-evaluates programs that have been accredited previously. In this way the committee stimulates existing medical schools to engage in a continuing process of self-assessment and improvement.

While the LCME accreditation process fosters comprehensive medical education programs, the 127 medical schools are diverse in their educational processes and curricula. They continue to rely on the traditional "two plus two" model of medical education which stresses two years of preclinical study in the basic sciences followed by two years of clinical clerkships.

Preclinical Education

The first two years of medical school ground students in the basic sciences so that they acquire an understanding of the scientific concepts underlying the practice of medicine. The traditional courses taught during this phase include anatomy, biochemistry, pathology, physiology, microbiology, pharmacology and the behavioral sciences. The instructional modes include lectures, conferences and laboratory exercises. There is significant variation among medical schools in the range of scheduled instructional hours devoted to the instruction modes. For example, AAMC data for 1983-84 indicate that for U.S. and Canadian medical schools the range of scheduled hours of instruction was from 401 to 1,700 in lectures, 50-650 in conferences, and 61-840 in laboratories.

Clearly the lecture remains the predominant method of instruction for the basic science years. Questions have been raised regarding the extent to which this practice reinforces passivity in learning. While the techniques used to develop skills during the preclinical years are the subject of current reform efforts, the overall goals of basic science instruction are widely agreed upon by medical schools. A thorough grounding in the sciences basic to medicine facilitates the ability of students to use scientific concepts in, for example, biochemistry and physiology, to understand the development and treatment of disease.

In the later more practical phases of medical training this basic science foundation provides students with the knowledge and skills to understand the underlying etiology of illness and disease. Most important, it provides students with those principles that are used to formulate strategies for diagnosing illnesses and developing therapeutic plans. Contemporary medical educators urge that the link between the preclinical and clinical training periods be very direct. Ideally, the former provides the scientific basis for understanding clinical problems, the latter enhances the practical ability to assess and treat them.

Clinical Education

It is during the clinical clerkship years that students develop their approaches to clinical problems, their sense of responsibility to patients and their attitudes toward working with other health professionals. A major assumption is that clinical knowledge expands as students rotate through clerkships which vary from two to twelve weeks in length. The number of required clerkships varies from school to school but virtually all schools require the core disciplines of medicine, surgery, pediatrics, obstetrics/ gynecology and psychiatry. During the clerkship medical students acquire knowledge and skills by engaging in three broad types of activities: they talk with, observe and examine patients (bedside learning); interact with faculty, residents and other health professionals; and absorb knowledge through scholarly readings, lectures and seminars.

The major objective of clinical education is to develop those skills that are necessary for providing competent patient care. The range of skills that must be mastered to accomplish this task includes the interpersonal and behavioral dimensions as well as disciplinary based clinical knowledge. Within all clinical rotations clerks must demonstrate a cluster of fundamental skills as they encounter patients. These skills include the ability to interview patients and take an adequate history, perform a physical exam, use proper diagnostic procedures, select therapeutic interventions and communicate information about the illness in such a manner as to encourage patient compliance with the treatment protocol.

Despite the comprehensive and thorough training approach that U.S. medical schools offer, they are being encouraged to continually improve their curricula and instructional procedures. *Physicians for the Twenty-First Century* makes specific recommendations regarding medical education that parallel proposals for reforming pre-medical education. For example, continued growth in scientific knowledge and technology precludes medical students from acquiring an adequate biomedical knowledge base during the two-year basic science period. The report suggests that pre-clinical education stress independent learning skills and analytical reasoning in addition to understanding the specific knowledge and concepts that underly the basic science disciplines.

In particular, reformers suggest that the basic science years place a greater emphasis on the relationship between factual discipline-based information and the clinical aspects of medicine. The idea is to encourage students to develop those clinical reasoning skills that facilitate integrating basic science information within a clinical context.

At present, a number of medical schools are using diverse approaches to integrating clinical materials into the basic science curriculum. "Clinical correlation seminar", "physical diagnosis" and "introduction to the patient" are courses that usually limit the amount of factual data that students must memorize and involve a more extensive use of supervised tutorial groups. By working collaboratively, students become more active in the learning process. Analytical clinical thinking is also encouraged because students must understand and explain those factors that underly the disease process.

Reformers are also encouraging improvements in the quality of clinical education. Some researchers in the area of medical training have noted deficiencies in the clinical skills of students. They caution against practices such as short rotations of less than four weeks where scant attention is paid to intensive bedside teaching. These critics recommend greater attention to the enhancement of basic skills such as the initial interview and history taking, the physical examination, the interpretation of diagnostic procedures and the oral presentation of data. In their supervisory capacity faculty need to pay greater attention to enhancing diagnostic reasoning skills and those interpersonal skills necessary to establish relationships with the patients. At the same time the students should be recording their findings and presenting, for review, their perspectives on the diagnosis and treatment of patients.

APPENDIX B

Licensure Requirements

Physicians are granted a plenary license to practice medicine in New Jersey by the State Board of Medical Examiners (BME) under the authority of the Medical Practice Act (N.J.S.A. 45:9-1 et seq.) of 1894. Although the Act has been amended numerous times since it was adopted, the minimum educational criteria for licensure have remained the same since 1921.

The core educational requirements are as follows:

- 1) Graduation from an approved four-year academic high school;
- 2) Completion of two years or 60 credits of pre-medical collegiate education, including courses in chemistry, physics and biology;
- 3) Graduation from a four-year medical education program in an American or foreign medical school in good standing in the opinion of the Board; and
- 4) Completion of one year of internship in a hospital approved by the Board.

When physicians apply for a plenary license, their credentials are subjected to meticulous review by staff of the Board of Medical Examiners to ascertain their conformity with statutory requirements. While the Medical Practice Act outlines, in the broadest way, acceptability for licensure, the New Jersey BME regulations identify the pathways to the plenary license. Technically, a candidate may be licensed by passage or endorsement of the FLEX exam, National Board certification or a sister-state license. However, the educational preparation of a candidate determines the pathway leading to licensure.

A certain amount of educational documentation is required of all applicants, except those legitimately exiled from their countries and practice. The list is extensive and includes the original medical school diploma (most critical for FMGs because of past incidents of fraud), pre-medical and medical school transcripts, physicians' evaluations of the students' clinical clerkship rotations and recommendations regarding the candidate's personal qualities. The transcript, reflecting the didactic portion of the candidate's education, is used to examine the scope of a student's study as well as specific academic performance. The clerkship evaluations and chronologies, documenting the clinical phase of the medical education, are used to evaluate the depth and breadth of the physician's clinical experience (acceptability and duration of core rotations, number of elective rotations, etc.).

Four types of candidates apply for the plenary license: U.S. medical graduates (graduates of Liaison Committee on Medical Education and American Osteopathic Association accredited schools), alien foreign medical graduates (AFMGs), U.S. foreign medical graduates (USFMGs) (both groups are graduates of non-accredited foreign medical schools), and alien immigrants. The U.S. graduate of a LCME accredited school must have completed one year of an approved residency program (PGY1), and passed an exam acceptable for licensure. If Parts I and II of the National Board of Medical Examiners (NBME) examination have been previously passed during medical school, the physician has the option to take Part III for National Board

certification or the Federation Licensing Examination (FLEX) component II, regarded as its licensing equivalent. Although the FLEX is considered the official state licensing exam in New Jersey and throughout the nation, most graduates of U.S. medical schools receive endorsement of the National Board certificate.*

The licensure process for FMGs varies based on the citizenship status of the applicant. However, in all cases, the licensure route is longer and more convoluted than that required of a U.S. medical graduate. Upon graduation from a foreign medical school, applicants should have successfully passed the Foreign Medical Graduate Examination in the Medical Sciences (FMGEMS) or its predecessor examination. In addition, all FMGs are required by regulation to complete three years of postgraduate training before being eligible for licensure and, in most cases, for taking the FLEX exam.** The credential review technically occurs following passage of the FLEX, as part of the licensure process. However, in some cases, applications from candidates desiring to "sit" for the FLEX exam have been denied based on a preliminary review of the candidate's deficient credentials.

USFMGs seeking licensure who have completed a Fifth Pathway program need not acquire certification from the Educational Commission for Foreign Medical Graduates but must take the three years of postgraduate training mandated for other FMGs. The Fifth Pathway is a program available to USFMGs whose academic pre-medical qualifications are comparable to the average student currently matriculating in the U.S. medical school system. Upon successful completion of a foreign medical school's curriculum, the Fifth Pathway participant must undertake a year of academic clinical training in a LCME accredited U.S. medical school in lieu of the foreign country's social service requirement.

In addition to the requirements that an individual must meet for licensure consideration, the foreign medical school issuing the diploma must meet the statutory test of "good standing." A listing in the World Health Organization (WHO) Directory verifies only that a foreign medical school is operating legally, but says nothing about the quality of the school's educational program. Most state licensing authorities, including New Jersey's Board of Medical Examiners, consider an entry in the WHO Directory as a minimum criterion for a foreign medical school's acceptability.

Alien foreign medical graduates (AFMGs) are subject not only to state licensure laws but to extant immigration laws. For the AFMG, for example, certification from the Educational Commission for Foreign Medical Graduates is an immigration requirement. Visas, enabling entry into the U.S., vary in their function, ranging from an exchange visitor (J-1) visa, to an immigrant visa to a third preference (or professional) visa. (The latter is particularly exclusive, requiring not only successful test results, but a Department of Labor statement testifying that an equally qualified U.S. citizen could not perform the job sought by the AFMG.) Though U.S. citizenship is not required, by statute, an alien FMG applying for licensure in New Jersey must have received a full and unrestricted license to practice medicine and surgery in his country of study.

*Two states, Louisiana and Texas, will not accept the National Board certificate for a candidate who has never been licensed.

**A companion regulation declares that graduates of those foreign medical schools specifically approved by the Board are eligible (as are U.S. medical graduates) to take the FLEX after their first year of internship or residency training. If passed, a certificate verifying licensure application is issued. Though this certificate is useful in applying for residency positions, the recipient must still complete three years of graduate medical education before the BME will consider his credentials for licensure.

The most diverse applicant pool seeking licensure in New Jersey qualifies for a unique licensing route. Political or religious refugees, individuals who have entered the United States seeking asylum rather than an education or a profession, present a unique problem to the Board of Medical Examiners. Frequently, and legitimately, such physicians do not possess the required documentation such as high school transcripts and original medical school diplomas. The Board's policy, in such cases, has been to rely on peer testimony. The physician must provide the credible witness of two or three individuals who meet the following qualifications: they must be currently licensed in this country, graduates from the same medical school as the candidate, and able to attest to the candidate's performance and/or practice in that foreign country. Acquiring these testimonies tends to be a long, involved process.

In addition to the requirements mandated by their particular licensing route, all applicants must meet the academic requirements set forth in the Medical Practice Act (N.J.S.A. 45:9-1 et seq.). Additional documentation may be required depending on the access route. All documentation offered by FMGs is carefully reviewed. As part of the process, individuals with questionable credentials must appear before the board's Credentials Committee to provide clarification. Licensure action is then taken by the full board upon the committee's recommendation.

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